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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/014,287	11/09/2001	Ronald Pasqualini	072219-0261705 (P05090)	2344

33402 7590 04/26/2005

LAW OFFICES OF MARK C. PICKERING  
P.O. BOX 300  
PETALUMA, CA 94953

EXAMINER
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MAI, TAN V

ART UNIT	PAPER NUMBER
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2193

DATE MAILED: 04/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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## Office Action Summary

Application No.

10/014,287

Applicant(s)

PASQUALINI, RONALD

Examiner

Tan V. Mai

Art Unit

2193

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 28 January 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 3,5,8,9,12,14,17-20 and 23-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 3, 5, 8-9, 12, 14, 17-20, 23-36 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. Claims 25-29 and 32-35 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Hmida et al.

As per independent claim 25, Hmida et al teach, e.g., see Figs. 1, the claimed combination. For example, the "first adder cell" comprises:

An exclusive OR gate circuit (I1, XOR1 & XOR2);  
a first output circuit (C1-C4 and I2-I3); and  
an inverter (I4).

As per dependent claim 26, Hmida et al teach the claimed feature.

As per dependent claim 27, Hmida et al teach the claimed feature.

As per dependent claim 28, Hmida et al teach the claimed feature.

As per dependent claim 29, Hmida et al teach the claimed feature. It is noted that XOR1 is inverted of XOR2. Therefore, one exclusive OR gate is considered the claimed "inversion circuit".

Due to the similarity of claim 32 to claim 29, it is rejected under a similar rational.

As per dependent claim 33, Hmida et al teach the claimed feature.

As per dependent claim 34, Hmida et al teach the claimed feature.

As per dependent claim 35, Hmida et al teach the claimed feature.

3. Claims 3, 5, 8-9, 12, 14, 17, 23-24, 30-31 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hmida et al.

Hmida et al have been discussed in paragraph #2 above.

As per independent claim 3, Hmida et al disclose, e.g., see Figs. 1, the "first adder cell" comprises:

a first logic gate (either XOR1 or XOR2);

a first inverter circuit (either XOR2 or XOR1 and inverter I4). It is noted that XOR1 is inverted of XOR2. Therefore, one exclusive OR gate is considered as an inversion circuit;

a first carry out circuit; and

a first sum circuit.

It is noted that Hmida et al do not specifically detail the claimed "first received signal being the first input signal" feature. However, Hmida et al do show the "first received signal being the inverted first input signal" feature which is simple modification of the claimed feature, i.e., see applicant's specification, page 18, lines 12-19, Figs. 3, 6 & 9 and original claim 4. Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to design the claimed invention according to Hmida et al's teachings because the device is a full adder cell as claimed.

As per dependent claim 5, Hmida et al teach the claimed feature.

As per dependent claim 8, Hmida et al teach the claimed feature.

As per dependent claim 9, Hmida et al teach the claimed feature.

As per dependent claim 12, Hmida et al teach the claimed feature.

As per dependent claim 14, Hmida et al teach the claimed feature.

As per dependent claim 15, Hmida et al teach the claimed feature.

As per dependent claim 17, the claim adds a second adder cell. Hmida et al disclose the claimed features, e.g., see Fig. 5.

As per dependent claim 23, Takahashi teaches the claimed feature.

As per dependent claim 24, Takahashi teaches the claimed feature, i.e., when the full adder is operated as a subtractor.

Due to the similarity of claims 30-31 and 36 to claim 17, they are rejected under a similar rational.

4. Claims 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hmida et al in view of Mazin et al.

Mazin et al have been discussed in paragraphs 6 & 8 in Office Action 08302004.

As per dependent claim 18, the claim adds a third adder cell. Mazin et al teach the claimed features, e.g., see Fig. 3.

As per dependent claim 19, the claim adds the "row" feature. Mazin et al teach the claimed features, e.g., see Fig. 3 shows an array full adder cells.

As per dependent claim 20, the claim adds the "row" features. Mazin et al do show different full adder cells in two rows.

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to combine Mazin et al's feature in Hmida et al,

thereby making the claimed invention, because the proposed device is a full adder having all the features as claimed.

5. Due to the new grounds of rejection cited above, that the office action is NON-FINAL.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tan V. Mai whose telephone number is (571) 272-3726. The examiner can normally be reached on Mon-Wed and Fri. from 9:30am to 2:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kakali Chaki, can be reached on (571) 272-3719. The fax phone number for the organization where this application or proceeding is assigned is:

Official (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-2100.



Tan V. Mai  
Primary Examiner